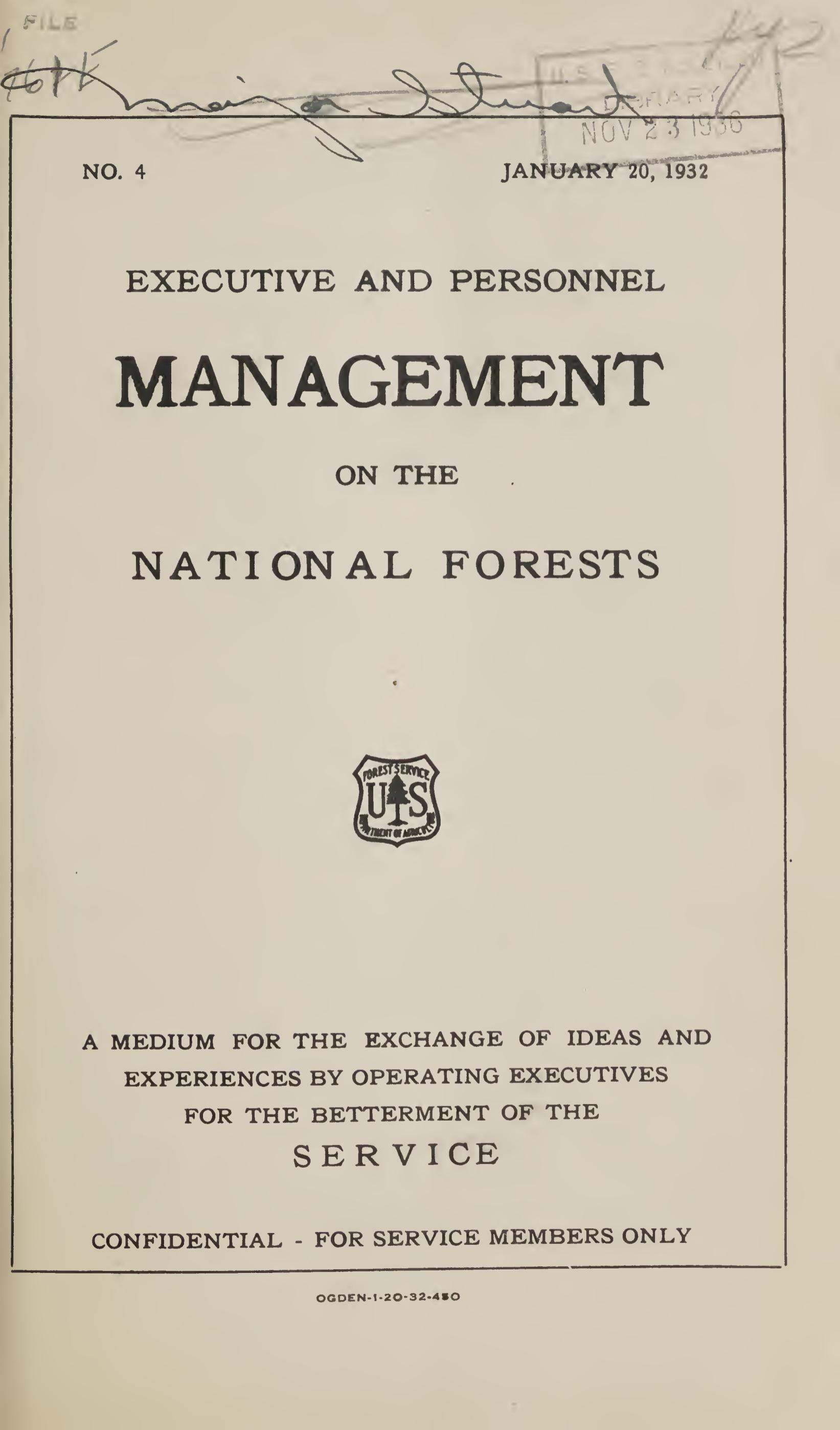


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ADMINISTRATIVE STUDIES—FIRE

By J. R. Bruckart, Supervisor and Lester Moncrief,
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The question has been asked, "Is there a field for non-technical administrative fire studies?" The inclination is to say "Probably" or "Sure" or even "Hell, yes." After the sketchiest thought, the answer is even more emphatically affirmative.

A Forest is extensive, irregular in topography. It has cover—woody and herbaceous, various in degree of inflammability, subject to lightning and man-caused hazard. Roads, trails, water courses, landing fields, make it accessible. The supervisor, his assistants, and rangers plan and supervise protection. Guards, lookouts, patrolmen give direct protection, with improvement crews, cooperative industrial and community organizations, bolstering the system as secondary defense. Fires are prevented, retarded and suppressed by effective use of man-power, supplies and equipment. And all the thousand and one details of the picture are in a state of change and development. Imperfections are apparent everywhere. Fires get away because of illogical forest boundaries, because of improper appraisal of hazards, because of poor transportation facilities, because of wrong presuppression planning and supervision, because of short-term failures, because of inefficient use of available resources. All these and the related subjects they bring to mind are adaptable to improvement. All of them, as Keplinger suggests, have been worked on, but much of such work has been too unplanned to utilize the full power of the research method. "To be effective, research must be organized and systematic; continuous and persistent; separated from routine daily work; and carried on in a spirit of 'Let's get the facts regardless of what they are, and regardless of whether we do or don't like their looks'."

To take only a few of the high lights of past progress makes an imposing array. They are concerned mainly with problems of organization, training and equipment. Many of the host of Forest Service men who have contributed to this progress would say they have merely used a little common sense in making obviously needed improvements. Probably they have unwittingly done more and followed the comforting definition of one writer, who says that "Research is simply the act of painstakingly seeking facts and applying the mixture of common sense and imagination to their interpretation."

It was our intention to trace the thread of research method through the unfolding of noteworthy developments. But the situation noted above made this impossible. Men who have become known in the Service as expounders of new and workable ideas and inventors of practical equipment disclaim any consciousness of

research in their work. They had few notes or written data, no specific working plans. They simply saw imperfections and went ahead and fixed them or invented something better. One thing is very apparent; activity toward change is everywhere and substantial progress has accumulated as the result. Studies have been carried on as regular parts of the job and results secured in spite of this handicap. Ralph H. Dick says, "To link other daily duties with research is usually fatal. It destroys the single-mindedness—the independence—the chance to cultivate the reflective attitude—all so necessary to the proper conduct of the work." Knowing this, it would seem likely that future progress can be speeded up.

Let's go back to 1910. The guards in District 6 totalled about 150. Some rangers had none, some one or two. There were no telephone lines, a few little stubs of trails and some Indian traces, almost no roads. Colored lines on a few atlas sheets guessed at the ranger district boundaries. The ranger and guard packed up and fought their separate ways into the back country. When they sighted a fire they pondered long and earnestly as to its location—on or off their beats. If it was off, they heaved a big sigh of relief and pushed ahead. No use wasting time riding out to report because the other ranger would be out—in fact, he was bound to find the fire anyway if it got big enough. When a properly located fire was found it was put out, or else the edge was worked, or else it was watched with great interest, or else it was left for one more promising on the next mountain. Sometimes the ranger rode out and hired a few men to help in whichever of the four methods seemed practicable when he got back. The guard of course didn't hire any men. He simply rode his more or less prescribed beat. Now and then he climbed onto a handy peak and looked a while. The ranger did this too. Permittees were called on to help by the terms of their permits, and sometimes they did.

Forest officers were not satisfied with the situation. They were planning for organization, clamoring for trail and telephone money. By 1910 many significant things were accomplished. On the Oregon Forest a very radical scheme was developed in the winter of 1909 for occupying 10 lookout peaks. This was partially tried out in 1910—Mt. Hood was one of the points. Along with this came the first one-piece compiled Forest map on a half inch scale. After some experimenting, Osborne built the Old Oregon fire finder—an octagonal iron plate with a pivoted alidade and paper protractor—and folks marvelled in 1910 when the lookout ran down and told them exactly where some fires were burning. Key men in nearby communities were being contacted and tried out—probably in D-2 even community crews were being organized. Si Bingham in 1910 devised a knock-down plow and fire line was built with it on the Ochoco. The first recorded fire fighting with a power pump was Bartrum's work with a 300 pound outfit in southern Oregon. To return to the Oregon, Secretary Wilson's

cloth signs had been mutilated with stencilled mileage figures, posted on all trails and these mileposts entered on the map. This period ended with a deluge of fires over the western districts.

In District 6 the date was August 24, 1910. On the Oregon at 7 A. M. seven great conflagrations roared forth full grown. All but two had been smoldering unknown for days or weeks, One came from a ranch clearing, one from a stump in a ranger's garden. Two hundred National guardsmen were called. A large force of private labor was hired at 45c per hour. (The time slip confusion at the pay-off was tremendous.) Unheard of expense, \$4,000, was incurred. This blow-up forced public attention. Money came for men and improvements. Men were free—in fact, compelled—to devise systems and methods for handling increased funds and for organizing and operating a more complicated machine. Telephone line and trail construction boomed, especially between 1911 and 1914. At first independent trunk lines with numerous stubs were built. About 1914 (in District 6) Clay Allen began to advocate telephone planning with the idea of centralization by Forest units. Transportation and communication development made possible the extension of the lookout system and by 1913 this system was pushed as a district policy. As a natural result also came the trend to consolidate ranger districts. Between 1910 and 1916 the number of districts was reduced by one third. By 1915 the short-term force in Oregon and Washington was 413 men. In 1913 the Forest-wide dispatching system was being put to the test on the Oregon. The first standardized lookout house was tried shortly afterwards, and policy developed of having the lookout live on top instead of at the spring. Still speaking of the Oregon, at the risk of being jumped on, fire mess kits—practically identical with our present ones—were tested in 1911, and emergency rations were to be found in the fireman's knapsack beside his kit of tools. Fire fighting technique began to be developed after about 1911 when FF appropriations became more liberalized. By 1914 it was fairly common practice to employ adequate forces of laborers on fires. The first Forest map employing triangulation with trigonometric control was compiled in 1913. In 1915 District 6 developed a fire atlas nearly identical with the form approved six years later at the Mather Field Conference.

Progress since 1915 has been noteworthy both for the refinement of practices and methods and for the development of new things. On the material side, for instance, the coming of road building with its attendant heavy machinery, had as a logical aftermath, the development of power drawn fire fighting equipment, such as the Killifer plow which first appeared in 1924. The Hauck torch since its first trials in 1916 has found a regular place in our equipment, as has the back pack spray pump, first experimented with in 1917. Portable power pumps have become greatly standardized since the first practical Fairbanks and Evinrudes appeared in 1920. Roads of course have extended the use of plows

and horses. Great importance has been attached to the relation of relative humidity to fire behavior. One hundred recording hygro-thermographs are now installed in Oregon and Washington, and in addition, every ranger has a sling psychrometer in his kit. Machined fire finders with a high degree of accuracy have been planned and made. A system of panoramic pictures has been proven of great effectiveness in detection and dispatching and this has recently culminated in the devising of a machine combining the work of the finest camera with that of a transit. And now the radio is quite definitely coming over the horizon to augment our telephone system.

Improvements such as listed above, however, lead rapidly into the field of technical work, which is outside the scope of administrative effort. The spread of material progress forced the pace of organization to use the rapidly expanding money, men and equipment. Since 1915 the protective force grew from 413 to 992 men with no increase in the year-long men. Planning of work came to recognition as being more and more important as the load increased. Standardization of work and methods between districts and forests became more necessary. Improvement work had to be planned and improvement crews organized to fit fire control needs. Peak loads were still beyond the capacity of forest forces so organizations of cooperators were developed. To increase protective force efficiency a system of secondary or fireman-lookouts was tried about 1920, and has since expanded until the majority of protective positions are in this class. The job of administrative guard or headquarters protective assistant was developed to allow the ranger more field time. For the same reason the central dispatcher system found favor, though for a long time it was opposed on the ground that it under-cut the ranger's responsibility. More recently the use of fire assistants working as members of the supervisor's staff has developed. Flying squadrons of fire fighting overhead, each consisting of a ranger and a few qualified outside men were tried out first in 1924. By 1928 these had developed into localized units of Service employees and had proved themselves of great value. Project fire technique grew until a capable fire chief must be a master of organizing. Specialization of jobs required training. The possibilities of formal guard training began to be investigated here in 1918, and the first camps were held in 1920. The system has since been extended until intensive training is now given to practically all members of the protective force, improvement crews, fire squadrons and community organizations. The original simple plans of action have grown into comprehensive fire plans and these backed up by specific emergency plans to fit the most extreme conditions. Records have accumulated until they present a base broad enough to support action indicated by such work as transportation studies or hour control analyses.

For the future, what? Undoubtedly, the methods of work, the tools with which we work will continue to develop along the lines

already started, for they have been proven by use. Undoubtedly too some of these methods and tools will be replaced by better ones. There need be no worry about this sort of progress. The invention of a tool, or the developing of the best use of that tool is relatively easy. The results are apparent, precise, measurable as you go, and therefore easily adaptable to the research method. Then, too there is for most men such a compelling interest in the creating of material things that we should not suffer from a shortage of mechanical advancement.

We have a goodly supply of material resources now. Our shortages are in human elements and methods for their manipulation. The time has almost arrived when fires get big because of nothing except man failures—personnel failures. Failures in prevention education, failures of judgment. Failures in selection, training, organization. It is in filling these shortages that our big job lies. And we can't do it as easily as we can read test meters on a machine. Human elements are none of them constant and none of them can be isolated for measuring. How can we be sure a man is trained, for example? After he does what we thought we had trained him not to do we know the training was at fault. But it would be more important to know it sooner. Which indicates that a system of inspection or testing is desirable. And after we develop such a test how do we know it really works? The interpretation of our data in this sort of research is not simple. It requires thought, which to most people is painful. Yet, this is the type of research which we must depend on for our future growth. The solution of problems in administrative control is our big job. Deliberately narrowing our survey to a few direct personnel problems, we see questions crying for answer in the following list: What methods may be used for determining the essential requirements of jobs? How can personnel qualifications for meeting these requirements be set up? How can the applicant's possession of these qualifications be tested? How can the applicant's attainment in these qualifications be increased? How far can skill be increased in any job? How far can work be advantageously subdivided? What is the relation of supervision to increased productivity? How can the value of supervision be rated? How can supervision bring the worker most quickly to maximum productivity? To what extent can authority be delegated successfully? There is just criticism of our past as well as reassurance for the future in the statement, "Too many vital phases of management have been disposed of by expressions of unsupported opinion. Research on any of these problems may be applied to individual instances. After a sufficient number of researches relating to any one subject have been undertaken, a statement of principle meriting universal acceptance will surely be developed."

ADMINISTRATIVE STUDIES—GRAZING

By R. E. Clark

Supervisor Rio Grande National Forest, Region Two

Altho Administrative Studies, or Managerial Research—call it what you please—is broad in its scope and surrounded by a multitude of complexities, we are probably most concerned at this time with that phase of the work incidental to an analysis of our current methods, practices, and procedure.

Basically, each of the thousand and one jobs done during the year should contribute to central or major objectives. Likewise, to facilitate acceptable progress on the production of satisfactory results, there should be no time spent on ineffective jobs and each job done should be performed in accord with the best known method. Accordingly, if these deductions are sound, is it not possible to focus our first analysis on the following:

- (a) The elimination of ineffective jobs, which are the breeding grounds for lost motion, and
- (b) The search for, adoption, and use of the best way of doing things?

What is the best way of doing things? Emerson says: "The best way to do a thing is that in which the result, fully consistent with quality, economy, and speed, is most perfectly adapted to its use." Study this carefully and you'll find that emphasis falls on the use to be made of the result. Accordingly, if we were to employ this principle as a fundamental factor in our analysis, our efforts would be concentrated first upon the use made of the result. Figuratively, each and every job we now perform, the maze of report and statistical data required, often involving duplication, and all other time consuming operations, would be placed, individually, in a test tube and its reaction to the fact finding process of analytical research definitely and positively determined. How many would pass this test satisfactorily? How many would come thru fully substantiated with factual evidence that the use made of the result fully justified the expenditure of time and money involved? This is a matter yet to be ascertained, but it is predicted that we are due for a lot of surprises.

Granting now that the first step—the elimination of ineffective jobs—has been completed, the work incidental to the next process is greatly reduced. We are no longer interested in how best to perform jobs that are purely the products of traditionalism, nor how best to secure results which are merely "nice to have." We have separated the wheat from the chaff and can now concentrate on the best way to perform the worth while things. The process is very much the same as utilized in the first instance. Based upon the use to be made of the result, each step incidental to

the performance must be fully substantiated by factual evidence before it can be classed as **best** from the viewpoints of quality, economy, and speed. Methods founded on little else than personal opinions would soon stage a fade-out and new ideas, often characterized by their immaturity, would be limited to definite "proving grounds", rather than applied universally. Lost motion would be reduced to the so-called irreducible minimum, and more time—the executive's main competitor—would become available for the production of effective results.

However, aside from the details of application and apparent results, the paramount issue surrounds the question—can we do it? There is plenty of the above mentioned factual evidence to prove that many have long since delved into the subject of administrative research and, in the meantime, have made progress. On the other hand, there are those who are bound to assume an attitude of skepticism largely on the basis of "What's the use—policies, procedure, and practically all the demands upon our time come from above—we have little, if any, control over the situation." It is true that policies, procedure, etc, travel downward, but that is as it should be. They are in the approved, or final stage, however, and unless you consider their point of origin, you have seen only half the picture. It is definitely known that many had their inception and early growth down on a Ranger District, in a Supervisor's office, or elsewhere below the top. Accordingly, if you are with the skeptics, you are a victim of misapprehension—the concurrent analysis of present day practices is a part of your job—you have got to do it if you fulfill your responsibilities. What's the basis for this last assertion? Read Page 12-A of the Manual. It states: "Regardless of rank, each member of the service is expected to contribute to its policies and methods. He not only has this opportunity, but is responsible for doing so." You are also referred to All-Service Project 7, a part of the Forester's 1931 Plan of Work. Reference is likewise made to a long standing Regional Office objective—"The elimination of all non-essential jobs or methods in both field and office work, or conversely, the continuance of only those methods and jobs which are proven to be essential, effective, and practical." Surely this ought to be enough to convince anyone that his initiative ability is not unduly restricted.

Is not our trouble due largely to the fact that we have "Failed to see the forest because of the trees?" We have all been so everlastingly busy trying to get things done, so wrapped up in the details of quantitative execution, that we have failed to maintain a proper sense of perspective. Some will maintain rather vociferously that they like to work under pressure. This principle is entirely sound, but let's apply the pressure only to those parts of the job which will produce effective results. Let's not apply it blindly and thereby waste a lot of effort. The big job is still ahead and if each one will consider himself a member of an administrative research organization, there is plenty of opportunity for all to demon-

strate their ability and desires to work under pressure.

In Lesson 2, King suggests an open forum on those phases of the job which analysis has proven to be either unnecessary or not practicable of application. A mighty fine idea—it is well to know the negative as well as the positive, since both have a common objective—a saving of time. Space forbids going into this matter in very much detail, but the following are a few of the material time savers which are known to have been made effective in specific cases:

1. Scheduling the entrance of sheep to specific dates and limiting actual counts to about 30 per cent each year saved 100 man days, out of the peak period. Opposed to this is the traditional belief that a 100 per cent count is needed. Weigh the use made of the data against the 100 man days and see which way the scale tips.

2. Reducing the number of annual inspections for each class of range from three to two—another traditional requirement—saved 115 man days out of the peak period. Again weigh the use made of the data secured from a mid-season inspection against its cost in time.

3. Reducing range capacities and actual use to a conservative basis eliminated between 50 and 60 man days from the peak period which were formerly required for “range trouble.” Why increase gross receipts if net profits are reduced proportionately and forget that serious breakdowns are often the result of over-crowding?

4. Elimination of the submission of the annual grazing report (Form 438) by Rangers saved 20 to 25 days of their time. In lieu thereof, data is collected in the field, incidental to inspection, submitted to, and compiled by the clerical force.

On the other hand, here are a couple of time consumers about which considerable doubt exists as to whether the use made of the results justifies the costs involved.

a. Why should we continue to inspect annually and record data mechanically on every special use permit, regardless of its condition, when it is definitely known in advance that the type of improvements and maintenance thereof in many instances surpass those at our ranger stations?

b. Why should we continue to number every sawlog in sales for \$100 or less when a check scale—the only apparent use for the data is limited to probably not more than one case out of 25?

REVIEWS

Improving Employee Relations—A Plan Which Uses Data obtained from Employees, by M. L. Putnam, Western Electric Company, Chicago. Published February, 1930, in the Personnel Journal

Since I have referred to these studies of the Western Electric Company a number of times as being examples of administrative studies of value, I want to give you some more direct information by reviewing an article about one of them. The work began in 1927 with the general objective of finding out more about the factors which contribute to good work, both volume and quality. They had in mind particularly such factors as hours of work, rest periods, light, and other physical factors. For this purpose they established a test room where these factors could be controlled. This study is a "by-product" of the original study.

It was found that production in the test room increased regardless of changes in these physical factors being studied. Why? What was it that changed constantly for the better? What factor had been overlooked? The employees became more interested, liked their work better, were not worried about quotas, or afraid of being "bawled-out." The conclusion was reached that "the mental attitude of the worker is probably the biggest single factor governing efficiency". The new problem therefore, was to find out what was the matter with the mental attitude of the forty thousand employees in the plant and how it could be improved.

The plant had given considerable attention to personnel problems, training and methods of supervision in the accepted traditional manner and thought the company morale was high. But when confronted with the test-room results they began to ask themselves "What is morale anyway? What are the factors governing morale? What can the supervisor do to establish better morale? How can the Company engender better morale?" and most important of all "Just what is the present morale of the working force?"

To all these questions they had to answer "We don't know." They had ideas about all these things of course but after all they had to admit they were only ideas, not facts. How get the facts?

In the past these things had been discussed by officials and their ideas had governed. Now it was decided to go to the workmen themselves and ask them what they thought. This was done through a system of interviews. But any laborer knows better than to criticise his boss or find fault with management. However to get useable data the men must talk freely and say what they actually think. So it was decided that the interviewer should be from another department, not personally known to the operator; that all interviews must be confidential; that any identifying statement would be carefully omitted. At first there was a ten-

dency toward asking too many questions, trying to direct the interview, and cover specific subjects. Now they encouraged the operator to talk about the things which are uppermost in his mind. Finding out just that is partly what it's for. If he doesn't want to talk about standard subjects, those subjects are unimportant as far as he is concerned.

At first, only workers were interviewed, but at their own request a number of supervisors have been included. The value of these interviews has been such that there are plans to expand the work in that direction.

This method is for the interviewer to explain the method and purpose of the interview to the worker and in an impersonal conversational manner encourage him to talk. They can go as far as they like in criticizing anything or anybody. At first statements were guarded, but in no case has their confidence been violated so now most of them talk freely. And, of course, everything is not criticism. Here are a few statements from interviews:

"I believe the Company is doing more for the employees now than they ever did."

"Say, I don't believe these interviews will do much good."

"I would never think of going up to the office with the things I've told you, because I would be found out, and this way the Company is going to find out how many people are dissatisfied and why."

"I really believe you are helping some of these hard-boiled Foremen and Gang Bosses. You know after they come back from a conference they start thinking it over and I believe it begins to soak in."

The principle use so far made of the interviews has been for training Supervisors. Supervisor conferences were used in training before the interviews were begun. After they were started interviews were used for discussion. At first a complete interview was used, and usually one or two would contain enough material for a conference. Later after a number of interviews were obtained they were analyzed and classified. Now they use a subject with all the material classified under that heading. They have considered, but not yet tried, the discussion with a supervisor of the material obtained from interviews of his own men. This use will be much more difficult, possibly impossible. Human nature being what it is there is danger from the so-called "defense reactions."

While the study is still going on, new things being learned and methods being perfected, the Company thinks the work so far has been very much worth while. Its chief values are summarized as follows:

First, the interviews have had a desirable effect on the employees themselves. It relieves their minds of burdensome

thoughts, makes them "feel better".

Second, the Company receives information which would not otherwise be received. Particularly valuable is the first-hand information about such things as sick benefits, pension plans, thrift plans, etc.

Third, the very operation of the plan has improved supervision. It is only natural that the Supervisors pay more attention to methods.

Fourth, the supervisory training made possible through the comments of employees is far superior to any previous program.

Fifth, the results confirm the test-room conclusion that the relationship between supervisor and worker is the most important factor in determining attitude or morale.

In other reviews I have made suggestions as to what the subject reviewed might mean to us; this time I won't even hazard a guess. But I'm going to remind you that in his "Personnel Program for the Federal Service" Dr. Feldman stated as number 12 of his 16 "elements" needed in a Federal program, "Establishment of a procedure for individual grievances affording a free outlet for the expression of complaints and leading to their prompt adjustment". On the other hand I've known Supervisors who, on returning from an inspection trip, was convinced that his rangers needed no specialized procedure for registering complaints. But I'm told its amateurish to plead "our organization is different". Possibly we too are human. And possibly someone may want to try out some modification of this plan as an administrative study.

Teaching Engineering and Business Students to Deal with Men and Manage Industrial Relations.

This is the title given to the published report of an informal meeting of educators held in New York last March in cooperation with the Society for the Promotion of Engineering Education. The meeting was attended by representatives from practically every big engineering school from Ohio east and from the best known Business schools. There were also a few business men from technical industries. While forestry was not represented, the meeting should be of interest to foresters since forestry is a technical industry closely allied to engineering and also because forest schools have so far been immune to that wave of dissatisfaction and reform which has swept over other technical schools for the last ten years. Perhaps a touch of it will be seen in the report of the study of forestry education that is now being made.

At the first conference of this group the subject for discussion was not how to teach or what to teach but whether or not the subject should be taught at all. In fact there was then considerable skepticism as to whether or not there was really anything to teach. "Indeed, at the first conference, you will remember that

there were some who questioned whether there was any content to the subject of teaching Industrial Relations at all, and now we are here discussing methods.”—Lewisohn. That was only seven years ago, but in the meantime they have not only found something to teach but have found a way to crowd it into an already overcrowded curricula. All schools represented except the Harvard engineering school were giving such courses, and Harvard proposes to offer a graduate course combining Business and Engineering.

The heads of technical organizations such as General Electric has given the society not only their universal approval but their testimony “that it was of greatest importance that men who come from engineering schools come equipped not only to handle the technical problems in the particular industry with which they would be associated, but also in the human problems in those industries”. “It was also the consensus of opinion that it was often difficult to find men who united with technical qualifications, training in the art of how to organize men under them.” Highly trained technical men in any particular field can readily be found but technical men, for the executive positions, who know how to manage men are not so easily found. For real success in engineering one needs “to study human nature more and the slide-rule less”.

While most of the schools represented give degree courses in industrial engineering, the problem here discussed was not these courses, or courses for those specializing in personnel management or business research, but courses given to the regular engineering students. As engineers they need to learn to deal in action with men. The engineering student entering industry begins at once “to meet the closeups of human relations—the angry boss, the irritated employee, the lay off”, etc. The school can help to give then a background and understanding by which to interpret these experiences, and not a near-sighted, distorted view. The school can aid in rendering the student sensitive and speculative to the human elements in experience and in developing skill in orderly objective analysis of human relations experiences. “Train in the method of thought that would permit them to capitalize their later experience in the school of life.” Dr. Willits said that “Students should learn not to expect rationality in human responses.” Think of your own experience; how many times have you failed to put something over because you depended upon your idea being accepted because it was reasonable. If that were only true, progress would be simple. Ordway Tead said “I take it that what we want to do is to give people a certain attitude, certain background, a certain point of view with which to cope with personnel problems in their future work”.

Now as to the content of these courses; what are they going to teach? There seemed to be no unanimity of opinion and still no great differences. Each seemed to feel that his own school was about right.

1. There should be a background. This would include something of history.

2. Then there should be something of methodology; something of standard methods used in personnel management.

3. The psychological approach but not the ordinary course given in psychology. There seemed to be a tendency toward the behavioristic approach to psychology.

4. Some favored a course that would "give a unified, correlated, coordinated view of executive management as a whole". This is lacking in the ordinary functional approach. Professor Rantendraugh of Columbia suggested that, "Besides teaching the students about human relations I think we could well afford to teach some of the professors". Another interesting idea was that, "When it comes to management, it is just as important to manage the boss as it is for the boss to manage the men." Junior foresters so often do not understand this.

Methods best adapted to the teaching of human relations was given considerable attention. Here again there seemed to be a tendency toward each man favoring methods used in his own school. This would indicate, would it not, that these human relations teachers are themselves human?

The discussion of methods was opened by Dr. Feldman, the man who wrote House Document No. 773, proposing a "Personnel Program for the Federal Civil Service". He says again, what has been said so many times before that the lecture method is the poorest of all, yet it is most widely prevalent. It has the advantage in that it enables the instructor to retain full control and pass quickly any difficulties or complexities that the course might involve. The disadvantage is that the lecture makes little impression. There is no tie-in between the lecture and experience. Other methods discussed were demonstrations, the discussion method, dramatizations, the case or problem method, etc. The problem case method received most attention. It is used to supplement the lecture and text and its use is increasing. It is something like what we have tried in our discussion courses. As you have observed, when the case involves a general principle and is well stated a discussion of the case helps to understand and realize the principle. It gives the tie-in to realities needed to make the general discussions seem real and usable in our work. Many of our cases have failed because they were so stated that they put you on the defensive or so that they appeared just individual cases with no general meaning. However, cases have been a help. Wish I knew how to collect more of them. My own experience is too limited.

These men are all using cases to teach human relations. Our biggest human relations problem seems to be what we call PR. Wonder why we do not use the case method more in our attempts to teach that? We all quickly learn the little superficial tricks like handing out news items but when it comes to handling a real case

involving public attitudes, too often we fumble it. Why wouldn't the discussion of such cases be a help. The same idea applies to personnel cases, both in their prevention as well as in their suppression. Then too let's not forget looking from the bottom up. If the ranger knows how to handle his supervisor, will there be any personnel cases?

Another thing emphasized that may be of interest to foresters just from school, is that while practically all practicing engineers say that such courses will contribute more to ultimate success than straight technical work, yet it is hard to sell the idea to students. The student who goes to an engineering school and pays his dollars for instruction, wants engineering. He wants the formal tangible things that the school represents. The other idea is not yet sold. Where courses are elective too few students are electing them. I once suggested to a Junior Forester that when he went back for his Masters degree that he take it in Business Management instead of in Silviculture. He didn't do it; I didn't myself.

While most of the discussion was centered around the immediate problems of the engineer in understanding and interpreting the human contacts and relationships which he must encounter, the larger aspects of the question were not altogether lost sight of. The engineer gives too much attention to physical things. He needs to get the concept of the world as a place in which great social forces are operating. He needs to grasp something of the sweep of changes that have taken and are taking place. What is the engineer's relation to social change? In his control of physical factors through the application of physical laws, what is his relation to these great social forces which are sweeping us on to we know not where or what. We sense the change. We know we cannot go back. Many are wondering if the new interest of industry in human relations came in time to prevent catastrophe. Not only in this group but pretty generally it is admitted that the engineer has not taken sufficient interest in the social implications of his work. And how about the forester? Does he realize that anything is changing except the climate?

The pamphlet which I have attempted to review for you came to us from the American Management Association. It can be had from most Regional Libraries, just which ones I cannot say.

SUGGESTIONS FOR DISCUSSION

This is our third opportunity to discuss administrative studies. King lead off with a general discussion of what such studies are and what they are for. Shaw followed with a more direct discussion of Service needs, while Clark and Bruckart followed it up by showing that we have already made a good start. In showing what has been done they merely emphasize the need for more. The fact that one Forest can save approximately three hundred man-days in one activity alone indicates the possibilities.

In fact there has been a lot of this sort of thing done on all Forests. In addition we have analyzed, we have discussed, we have argued, and we have improved. But the discussions so far indicate that we have now reached a point where we need and can use downright studies, research, experimentation, and tests on some systematic scale.

The method I proposed has been severely criticised, and justly so. It was inadequate. That has been shown. What will you have? You know the machinery set up as a result of the Regional Foresters meeting in 1930. On page 69 of the "Committee Reports" the Forester approves the recommendation that each Region formulate a plan and appoint a "liaison officer" to head-up the work. On the same page he designates a committee to "encourage and guide" administrative officers. Is that all you need? Do you get enough "encouragement and guidance"? Not being an administrative officer encouragement is as far as I can go, but you can say what you think you need. You can recommend, and up to a certain point you can make your own plans. This publication is not the place for recommendations, that is recommendations requiring administrative action. It does open an opportunity for you to get together so that you may have concerted action and help each other to develop whatever should be done. I am, therefore, suggesting that you discuss:

1. What is needed administratively to facilitate this important work which you have all agreed is needed?

Entirely apart from previous discussions but going back in a way to last winter's studies:

2. The best possible organization for a Forest. What is it.

This question has been suggested by five Supervisors, although two referred only to fire forests. One question was how to organize on a fire forest so as actually get the grazing work done. Another suggested that he could do away with ranger districts, handle all the work from one headquarters and save money. Another says:

"We are, as you say, in a world of constant change but has it ever occurred to you that the Ranger District form of Forest Administration has remained practically intact throughout our 26

years of existence? During that time, however, the specialist or staff man has come into the picture to relieve the District Ranger where volume or technical matters have prevented his full assumption of the responsibilities of his District. In many cases, he is now only concerned with a few activities besides keeping the machine greased. Why not replace the District Ranger by a good improvement man and center all administrative responsibilities in an enlarged staff each of whom would handle one or more activities but not be concerned with the mechanics of the job?

"Why try to standardize organization throughout the entire Service when there might be situations that could be much better handled by modification or complete change?"

Possibly this question should have been discussed before the "Under-ranger" job, as whether or not you have such a position will affect your organization.

You have our discussions of the principles of organization from last year. You know what scientific organization means. You know from analyses what the work is on your Forest. Now what is the best form of organization with which to get this work done—to meet Forest objectives—to give the public satisfactory service.

If you care to do more than just discuss, suppose you take the total work for the Forest as listed by months in the analyses, and plan a method for handling it that involves less time than is taken by present plans. For example, it is easy to argue that you can save time by doing away with ranger districts but do you know until you have actually scheduled all the work now being done on those units?

Of course the time element in the plan is not the whole story. It is important to consider whether or not the new line-up would carry the same incentive. Would men get as much satisfaction as they do now? By satisfaction I mean that thing which drives us to work when we do not have to, makes us want to create new things or new ways, and causes us to seek appreciation. You know that we have got to keep a lot of this thing in our plans if we want them carried out.

And let me warn you that this is not just a question of whether or not we want to keep the ranger district. That is just one phase that was suggested.

May I have your discussions by February 17?

DISCUSSIONS

I am again up against the old question as to how many discussions to publish, on what basis to decide which to publish and whether or not I should cut them or publish them just as submitted. This time I have not cut. Some are long. But sometimes one needs space to develop his idea. I was tempted to leave out all the long ones and publish a greater number. But would you have liked to miss either of them? And shall I just publish the best? If I do that the published discussions will be colored by what I think best, which may not be what you think at all. There are some held out this time that appeal to me much more than some of those included. I have tried to mix them up.

Question number five you will find has not been given much thought. I fear some of you did not even read it carefully. I did not really say an assistant made **more** work for the Supervisor; I said his addition to the staff creates **new** work, that is work which the Supervisor did not have before. In addition to the new job of supervising an additional man there is other new work in the necessary duplications—two men reading circular letters, instructions, etc., for example, where only one read them before.

One other thing: Your discussions or lack of discussion suggests to me that the one who told me that this phase of your supervisory work is being sadly neglected, knew what he was talking about. According to all the organization experts in industry, you should give more time to the supervision and inspection of your assistant than to any one of your rangers. Why? Because it will yield greater results.

DISCUSSIONS OF LESSON TWO

Huber C. Hilton

Medicine Bow

Laramie, Wyo.

We are proposing in this course to discuss certain questions, problems or practices of the Forest Service, but are we not in this preliminary survey failing to follow the Scientific Method in such surveys or suggestions as are now being made? In other words, a problem here or there is being suggested, but apparently we are not analyzing the whole Forest Service set up. If we are going to consider the National Forest as a unit for our discussions, then why not subdivide the work into office and field, or some other form of subdivision, and then, by the research or scientific method, determine just what the real problems worthy of discussion are.

I do not mean that worth while subjects for discussion have not been submitted, nor that a great deal can be gained by the discussions. I do believe that preliminary to such a course, an analysis of the job by a group of Supervisors and superior officers would have separated the really worthwhile problems from those less important, and at the same time, determined just what functions or activities needed a "test". Certainly Dr. Hirschfield did not mean that an exhaustive study should be made of "every thing". An analysis would be a sufficient test for many.

Certainly any suggested new method should not be based upon an opinion, but rather upon an analysis of the job or activity, followed up by a thorough tryout before becoming standard or setting up a new standard.

An analysis of needed reports, contents, purpose, use, etc., certainly would be helpful. We keep duplicate records in different cases, as, for instance, in recreation plans, camp ground summaries, and again in the investment account for recreation improvements and in grazing records on Form No. 621 and duplicated on Forms No. 662, permit allotment sheets. The forms No. 621 seem obsolete, as you use data by units, not as permittees, as a general rule. Certainly a study of reports, records and forms for a national forest would prove very much worthwhile.

Some phases of this work can be handled on the Forests. In fact, it is now being so handled, for certain activities from time to time in which certain of the personnel are interested. A form master fire plan was worked out here with the aid of the entire personnel. The timber sale men worked out revised forms for sale costs to apply to our conditions and to furnish the data we wanted. Other examples can be noted. However, we need, I think, a house cleaning for this sort of thing to eliminate lost motion in doing work not needed or applicable.

As to the proposed study as to time to be spent by Supervisors in supervising work of an Assistant Supervisor, I do not favor spending time on this, as it is just a part of the work of a

Supervisor. He must decide this for himself on the basis of the capability of his assistant.

James E. Scott White Mountain Laconia, New Hampshire

I should like to offer an humble but hearty endorsement to the view expressed by King that "the Forest Service has as great or perhaps greater obligations to manage well the National Forests as to stimulate conservation on privately owned properties."

To my mind high grade management of these National Forests, both as public business or public service enterprises and as forests not only constitutes the major obligation of our organization, but also affords us our greatest opportunity or medium through which to stimulate conservative management of private properties. And yet this view may not be sound. Maybe the two obligations expressed by King are on even footing; perhaps the general stimulation of "conservation" on lands outside the National Forests is the number one job. In two great Branches of the overhead, "Research" and "Public Relations" it appears in the East at least to be so rated.

King also says "It is frequently admitted that technical research is now ahead of actual accomplishments on the National Forests." It is true on this Forest (and in this I do not mean to assert or claim any local superiority) that the Rangers on their respective Districts possess and know how to apply much more technical knowledge of forest management than can possibly be applied to their management of these forests for decades to come. And yet I wonder if the silvicultural research of our organization is not more scattered than advanced.

For example:

I know a Supervisor who three years ago undertook the management of an important eastern National Forest, one which perhaps much more than many others should be an outstanding demonstration of our most advanced forest management practice.

Personally deficient in professional or technical training, he never-the-less was able to see that aside from a high standard of timber sales administration and a perhaps excessively rigid application of certain utilization and slash disposal requirements, forest management as we know it in the Service was neither making nor headed toward definite constructive progress. The basic management layout did not fit, management plans had lapsed, inventories of stock, and knowledge of growth were lacking.

It was decided to take a fresh start. The basic layout was revised and a project was launched with the purpose of securing unit by unit an adequate ground control, a classification of the land under "Commercial" and "Non-commercial forest", an accurate stand, age class, and type map, inventories of merchantable material, and adequate data as to reproduction and growth.

It was and still is surprising to find Research unprepared to

prescribe a practical technique for the necessary estimating of the timber stands, for the conduct of essential growth studies, unable to supply complete and accurate volume tables to replace the existing tables of demonstrated unreliability. The project has gone along with much expensive groping, trial and error, developing its technique as the job progressed. Now, after two years, the Forest organization believes it **knows how** to do the job. On the other hand this same Forest force has known for years that the birch when subjected to sudden and severe change of environment would go to pot. In the three year period above mentioned Research has investigated this and found out **WHY**, but nothing new to do about it. In the same time it has at least casually investigated the reported presence of carrier pigeon in a distant county. I do not mean to infer or imply that during the same time the same unit of Research has not made real progress on really important fundamental studies. I mean only to support the point that perhaps silvicultural research is not only ahead but too far ahead and too widely diffused.

P. K. says, "For our technical problems we have a large, highly rated, well-equipped organization."

We have. For example, the annual operating expense of our Northeastern Forest Experiment Station, according to figures given me verbally by its Director exceeds that of White Mountain National Forest.

To quote P. K. further, "Our technical studies are therefore well taken care of. But if these other problems are to be studied you must do it. - - - A couple of years ago we agreed that about ten per cent of **your work** was technical and the other ninety administrative. In the past **our research emphasis** has been on the ten per cent. Why not put a little of it on the ninety? - Whether or not administrative problems should be studied by the Research organization - - - is not ours to decide."

I can't follow this line of reasoning, and I should hate to believe that there is any phase of research (whether spelled with a capital or lower case "R") which is "out of our realm" so long as it has any bearing upon the scientific solution of our administrative problems, and so long as statements or suggestions have their source in a genuine desire to build better rather than destroy. I have never yet felt that any of our Researchers hold their unit as beyond discussion.

It does not follow necessarily that because we have a large highly rated and well-equipped unit of research **OUR** technical problems are to be considered in any off-hand fashion as "well taken care of". That organization might be engrossed in a broad program of most interesting, promising and highly profitable (to someone) program of studies, and yet **OUR** urgent technical problems may figure but lightly in that program.

P. K.'s use of **YOUR** work and **OUR RESEARCH EMPHASIS**,

in the quoted lines seems to imply that while OUR work is ninety per cent administrative, OUR RESEARCH EMPHASIS has gone into the ten per cent technical portion of our job. This surely isn't so. I'm sure that the average Supervisor and Ranger has done much more administrative than technical research work for the past few years. What Kep must mean is that the research work of the Service as a whole has been very largely in problems of technical forestry. This appears to be so.

And isn't this where the whole thing bears upon the problem in hand? I for one believe that from the standpoint of technical research alone a much closer bond should be welded between the Research workers and our National Forest administrative men. To illustrate, there are two "Experimental Forests" within White Mountain National Forest. In connection with the administration of these areas the Manual provides for fairly definite lines of co-operation between the Director of the Experiment Station down at Amherst, and the Supervisor here. These officials are reasonably congenial and it is hoped to develop during this winter a reasonably comprehensive Administrative Agreement between them. But by and large these areas must inevitably become somewhat like an Embassy in Washington, controlled and managed by a foreign authority. I think it's dead wrong. Instead of having on these Experimental Forests within a National Forest a young man as resident forester, absolutely unacquainted with National Forest protection and administration, directly reporting and responsible to a Director down at Amherst, these areas, the resident personnel and the program of work thereon should be an integral part of White Mountain National Forest to be handled by the Supervisor with the guidance and leadership of the Branch of Research, just as he handles Forest Management with the guidance and leadership of the experts in that Branch.

I would not argue that Research as now organized should undertake our administrative studies. On the other hand these studies cannot be satisfactorily carried forward from such a starting point as "If these problems are to be studied you must do it - - gradually, here and there, etc." I see the whole thing something like this.

The Service clearly has reached a point in its development where there is genuine need for an overhaul of the administrative machine, and for a COMPREHENSIVE and SUSTAINED program of administrative research.

It should be focused first upon more efficient management of the National Forests as a public scientific and business enterprise. But it should not be confined to the Forests proper. The organization and functioning of the "Branches" and the "Regions" are fully as much in need of such research as are the Forest units, and it is neither desirable nor practicable to elevate field standards of accomplishment far above those attained by the overhead.

It is all very well to say that "everybody should do it", that each of us must be a living question mark. But when we get right down to cases we cannot hope to progress in this work as we should until under the Forester and Regional Foresters there are assistants, associates, or Divisions heading up and leading the way in administrative research, planning and results control, and until the Supervisors are so staffed that the work may receive its proper attention on the Forests.

This does not necessarily mean more "overhead". The Service spends about so many dollars each year on research. There appears to be a widespread opinion that as between silvicultural research and administrative research the first gets a disproportionately large share of the total expenditure. I appreciate that moneys appropriated for "Silv. Inv." may not properly be used for administrative research, but it seems reasonable that if our organization is convinced that there should be some shift of emphasis an appropriate change in our budget might be worked out and the appropriating powers sold to the idea. In other words, leaving persons and personalities out of it why not shift one-fourth of the expenditure of our Branch of Research into the administrative Divisions of Research-Planning-Results Control suggested above for Foresters and Regional Offices. In the field, for example, restore the Bartlett and Gale River Experimental Forest Areas to White Mountain National Forest control, and instead of a resident officer reporting directly to an Experiment Station Director assign another staff assistant to the Supervisor. Such an assistant should be able to do full justice to silvical research on these areas, do it better because of his closer affiliation with practical administration, and at the same time help release supervisory time for administrative studies and results control.

To my mind we have now come to the key to this situation on the Forests.

King says "The difficulties are HOW TO GO ABOUT IT and HOW to find the time to do it. Keplinger asks, "WHO will do it? HOW ABOUT TIME?" We on the White Mountain doubt the magnitude or importance of the first difficulty. For a long time now, all hands working together, we have squeezed into most of our working days some steps, at least some thought contributing to an overhaul of our administrative machine. Though we haven't retained the former picture for purposes of contrast we believe we could show almost anyone substantial progress. Never have we been halted by the obstacle "how go about it", though perhaps this is because we have not gotten beyond the A. B. C. stage of cleaning house, of getting policies, standards and instructions down into concrete form where we can at least raise intelligent questions. Mr. Barby seems to express it when he says it is simply a process of systematized fact-finding. The process itself as we see it leads the way into "how to go about it".

Difficulty No. 2 "how to find the time" is the real one. I am forced to cite personal experience to illustrate this point. As I see it the Supervisor must personally take unto himself a very large part of the administrative research job on the Forest. He is fortunate indeed, if, as in my case, he has a body of men on the Forest who individually and collectively enter into this feature of the work with real interest and enthusiasm.

In 1929 we made our first Ranger District analyses, 5 of them. They were pretty poor products considering the tremendous amount of work that went into them. Nevertheless Plans of Work were built from them and brought into use. In May and June, 1930, these analyses were completely re-made. Better analyses, and more workable plans resulted. The Ranger District and staff structure of the Forest were then torn apart and put together again on the basis of facts developed through these analyses. In the summer of 1930 an Assistant Regional Forester and I analyzed the Supervisory job of the Forest for the Calendar year 1931 and we have worked throughout this year under Plans of Work based on that analysis. In the fall of 1930 the Regional Fiscal Agent, our Executive Assistant and I analyzed the clerical job load. And next as a sort of final step in job load analysis I initiated a study of the sub-ranger work load of the Forest. Concurrently we have completely overhauled our offices, Supervisor's and Ranger's, carried out completely and thoroughly the destruction of useless files, brought transferred files up to the same standard of utility as our current files, set up a filing system for a new Forest unit at present under our wing, absorbed the new Activity Cost System, including the investment section, carried a big emergency road program in addition to our sizeable regular road and trail program, initiated and carried on through two years an ambitious management plan project, established a new system of management control, launched a program of sale area betterment, another of cutover area studies, a couple of plantations. In F. Y. 1930 we did a \$108,000 timber

What happens to administrative research?
sale business, last year \$60,000 and this year to date, not much.

I have in my desk the completed Monthly Job Sheets and Trip Plans of our Rangers for F. Y. 1931. I have the same material for the Supervisor and assistant and staff man for the calendar year 1931. Our Ranger analyses and plans have improved from year to year, but never yet have I found it possible to give the "completed" material the careful analytical study which is obviously essential if our next analyses and plans are to be as good as they should be in the light of our experience. I must have a new Supervisory analysis and plan ready for July 1, 1932. Before there are written the completed year 1931 should be subjected to a most careful analytical study. Our clerical analysis and plan bogged down. We must hit it again, and with a quite different line of approach. I have our sub-ranger job sheets for the past season awaiting review—a review which should give us important facts bearing upon the

measurement of that job load and the formulation of adequate standards.

Most of this class of work cannot, in my judgment, be successfully delegated. It is largely my job. I would yield to no one in the Service in personal interest in administrative studies. My working hours are as numerous per day, week, or month as anyone's should be, my personal output is probably up to average in this line, and my force to the last man is ready and willing at all times to share as fully as possible in the development of this studies program. And yet the rate of progress is to my mind quite unsatisfactory from the standpoint of the Forest alone, and I believe it must be also from the standpoint of the Service as a whole.

I saw a recent note where a Regional Fiscal Agent had reported the new Activity Cost System as installed on three Forests and **working smoothly with no appreciable increase** in clerical labor. I cite this merely as a sample of the sort of utterly ridiculous self-delusion which has to a serious degree permeated our entire administrative studies work to date. This new Cost System is to my mind a big step forward. It has great possibilities for good, and those possibilities will be realized in exact proportion to the interest and effort which are put into the system by Supervisors, assistants, Clerks and Rangers. I presume a Forest may set up the records in the new form and make the required entries without any appreciable increase in effort, over that required by the old system. And the new system would then be just as USELESS as the old.

It's the wrong idea and attitude. The new cost system, administrative studies in general are not merely something nice. **THEY ARE ESSENTIALS**, offering in the long run great promise of better management of the National Forest enterprises and consequently great contributions to the advance of forestry or forest conservation in the United States. Let us so recognize them and **PROVIDE FOR THEM**, definitely and adequately. I believe we can do it without increasing total Service expenditures one dollar, if we start at the top rather than the bottom, eliminate some non-essentials, shift the facilities thus freed to points where they can be brought to bear effectively on the job and then as Dr. Hirschfield says, get everybody within his own sphere not only in on it but in on it as a cog in a well-built plan under skillful control.

J. E. Ryan, K. A. Klehm

Kaniksu

Newport, Wash.

1. Systematic studies of every day jobs should be made and to some extent at least are being made. Methods should be tested before being made standard. This does not appear to involve any radical departure from what we are trying to do at the present time.

2. It is believed that several phases of this subject are being

studied every day on the Forest. It is not a question of time or who will make the study; the systematic study is really part of the job we are trying to do. Everyone in the organization should be encouraged to form the habit of systematic study. If one is frank with himself, he can analyze his own methods and discover his own weak points. If everyone would actually question his own work and apply fact finding thought to everything he did, the need for systematic studies would be less apparent.

3. I do not know of any restrictions which would prevent one from looking a standard in the face. The fact that a specific standard has been adopted, does not materially lessen the need for questioning. Standards have been changed in the past and will continue to be changed in the future. There may be better ways of doing things than by following the prescribed standard. One should convince the standard maker that his way is the proper method before deviating very far from the set up.

5. The assignment of an assistant or two should not make the Supervisor very mad. He would probably slip a few jobs he has been doing to the new assistant and thus provide time for the needed supervising and training. If a man has a full schedule of work and is given added work in the way of training new assistants, the additional help should mean that some part of the heavy load carried by the Supervisor would be delegated to the assistant, else why the assistant.

Any new man added to the organization presents additional work to the Supervisor in the way of training. It goes with the job and it is up to the Supervisor to refine his everyday methods to take care of these additional loads.

Charles D. Simpson Coeur d'Alene Couer d'Alene, Idaho

1, 2, and 4. I am for the proposal to make systematic studies to determine how best to do the common, everyday, jobs. It is pretty true that most of us go along doing our various tasks as we first learned how to do them and may even be shocked and get our heels in the gravel if someone proposes some different and seemingly radical method. There are other jobs which we have never followed through the kindergarten and our teachers are not far ahead of us. An example of the latter is our effort at fire prevention and in arousing up and coming cooperation in fire detection and especially in suppression. We have not scratched the surface along this line. How best can we get the stump rancher or other resident in or near our Forest to function as we read about in other regions? How really to get it over to the school children? How educate the sightseer from New York hightailing across our Forest from Park to Park? Examples of common, everyday, jobs. How to train firemen or other temporary employees to prepare good service reports and time slips, to order properly, to deal with the public as we would like, etc., without the ranger having to spend

too much time at his headquarters? How to get pack stock fed most economically? How to get training on the job of lookouts in 100 per cent fashion? How to get done during the field season those jobs like current status changes and certain semi-technical jobs which are a little beyond the clerical force and the supervisory and technical help is occupied on field work? How far to go in furnishing commissary?

King's proposal to draw up a plan, divide the work, and assign the parts, is a logical one but I think more would be actually accomplished by the less correct method of allowing each supervisor (or ranger or R. O. man) to select a job for study, report to P. K. in advance a lineup for that particular study and then by next winter at least turn in his results. It is said a good chairman appoints on a committee those who have demonstrated a strong interest in the subject. Possibly assignments could be made from our papers but if we pick our subjects we would more likely be really enthused about them. Some time would be needed and should be provided for even if something else had to be slighted temporarily.

Number 3.

No matter how far we progress in establishing standards there will always be details which for one reason or another are not standardized which will make grist for the "Question Mark Mill." Also, I do not understand that we are forbidden to question policies, standards, and instructions. True, we are to comply with them as long as they are in effect but conditions change as stated in the lesson and an alert ranger or supervisor is in good position to see and make known the need for amendments. Are these things handed down from above? Have we not been led to believe that we have contributed to the development of policies, standards, etc. and, if so, surely our honest questioning if based on fact finding would be welcome?

Number 5.

Who ever heard in these modern times of the addition of an assistant supervisor? And by the reverse of P. K.'s reasoning you supervisors who have lost an assistant should now find time to improve your golf game. Seriously though, the supervision and especially the inspection of the field work of the assistant supervisor or staff men is important, somewhat difficult and too often allowed to ride. On many Forests the assistant is used as an alternate. When the super is in the field the assistant is in the office or when the assistant is on one district the supervisor is most likely on a different district. Where the different lines of work are divided the supervisor is handling his activities and may fail to inspect the assignment of the assistant. The supervisor tries not to duplicate the efforts of the assistant. Yet to get a good idea of his effectiveness some follow up and duplication is necessary. How much? The ranger does not carry to the boss tales of

minor failings or faults of the assistant and you would not want him to, except in the case of gross misconduct. It is the super's job to know the strength and weakness of his assistant. I surmise the Regional Forester finds it easier to inspect his supervisors than the men of his own staff.

Roy A. Phillips

Nezperce

Grangeville, Idaho

1. System is the key to efficiency in doing any job under the sun. We see its handiwork in all we do. In work, in play, in the world of business, on the field of sport, wherever we go, whatever we do system is all important. The champion in the ring, the successful baseball or football star and coach, prominent business or professional men is in turn a slave to system. To be a success in anything we do calls for a large measure of system, team work, or what not, in planning and performing work. It calls for physical and mental exertion in extraordinary measures—the drive and will power to keep on trying over and over when failure seems almost certain. It is only those favored individuals who possess these qualities in large measure that reach the top. Strange to say, it is generally the comparatively simple things we do that require the greatest effort to perfect, things that we pass over without much thought, the common everyday things, that are most important.

The testing of methods ties in closely to human relation studies. The person or agency conducting the study must be first of all open minded and not expected to arrive at some forgone conclusion or result. It is the old proposition of leading the horse to water; and I presume we have all gone out some time or other to teach someone a little system or test out a few methods, and wound up by getting about as many improved ideas as the other fellow.

I do not like the term "standard". To me it smacks too much of cut and dried routine, something perfect that is accepted as the final word. Only too often conditions on the ground determine the methods to be used and quite often too, we find men doing things wrong because they are following a system that they believe to be standard.

2. The Forest is the proving ground in this case. Therefore, why not try out the systematic studies ideas as you would a piece of machinery assigned for a certain purpose. We get lost only too often in the rut of our own ideas and lose sight of what the other fellow is doing, or the ability of being able to do the other fellow's job in a pinch or failing to develop understudies to fill the clerk's job or the ranger's job. Perhaps we are not doing a lot of the things we should, but it is my guess that most of us could be doing a lot more than we are, and that if we had a little wider perception of the clerk's or ranger's job we could save him as well as ourself a lot of unnecessary work. No organization is efficient that cannot go ahead on its own steam even with the loss of a

man or so, and I would feel very much a failure if my Forest did not function satisfactorily, even should I leave the job for an indefinite period. It would mean, perhaps, that a lot of overtime would have to be put in by two or three men, but they are qualified to do the work.

I think that we should question very critically everything we do that involves work for someone else. It is easy to tie up an organization in a web of routine that benefits no one to any great degree.

3. I would not subscribe to the idea that everything should be questioned to the extent that every man be a "living question mark". Certainly, every worker should be interested sufficiently in his work to study it and be in a position to suggest improved methods. The occasional ambitious individual does just this, while the rank and file keep on doing things according to tradition and would keep on indefinitely if left to individual inclination. A certain class of workers are always going to have most of their thinking done for them when it comes to setting up standards and methodizing their work.

4. I wonder if the matter of a lack of time to carry on administrative studies is not pretty much a state of mind, lack of incentive or inclination or both, and that if we but took advantage of a portion of the resources available that creditable progress might be made where we now feel that things are at a standstill. In the first place I am of the opinion that whole problem reverts back to the idea that the "mechanic must know his machinery" before he starts an overhaul. If he doesn't he is probably in for more trouble than he can get on top of. And human machinery is so involved and complicated that there is some doubt about anyone being able to fix each individual breakdown or insure a protection against a breakdown, but I do think that this condition can be minimized to the extent that no one or two individuals should be indispensable to the operation of an organization by a failure to function.

5. For a while at least the Assistant is probably little more than an added burden unless of course he has been well trained in the work he is to do, and the careful Supervisor will at least want to check on this training to satisfy himself that it is going to conform to his ideas of how the work should be done. At any rate, the new assistant is not going to materially lessen the load the Supervisor is carrying for a few months or perhaps even a year.

D. E. Clark, E. A. Snow Arapaho Hot Sulphur Springs, Colo.

While it is not our job (i. e. of Supervisors, Assistants, Rangers) to decide on many of the policies, standards, instruction, etc., most of the ideas originate in the field, and many are brought to light by supervising officers. The standard grazing management

plan embodies ideas selected from various plans thought of, put into practice, and tried out by members of the field force. One ranger in this Region last fall indicated the appropriate trail plan numbers on his trail sign requisitions—next year, we understand, it will be standard practice to do so in the entire Region. One could cite such instances indefinitely, even in portions of our ranger district work plans and methods of handling them. Some are relatively very important, some minor, but all told they go a long way toward making up the whole. Most of them are given a trial to some extent before being made standard. The real test, of course, comes after they have been made standard. Then one usually hears considerable comment on difficulties encountered, practicability experienced, and further proposed improvement. Yet this system does not let the bars down to each man to do things in his own way "contrary to existing instructions". Permission may often be secured to give the "opposite" or "deviations" a trial. Yet, the Service as a whole is usually considered to be conservative. Is it? A comparison of the present practices with those of 15 years ago is rather enlightening on this subject, we believe. Is not some of our conservatism due to the fact that certain practices of our predecessors warrant considerable scrutiny for the values they may hold?

DEC. I must agree with Rex King that human nature is the biggest factor in administration. Progress IS being made in doing things, and yet "doing things" is relatively unimportant in Service work as compared to "getting things done right". We have worlds of information on how things should be done, but not so much on "how to get things done right".

A study of human nature in executive and personnel management tied down to Service problems would cover a large territory, large and important enough to warrant a regular full time study course. To attempt to discuss actual Service problems along this line in one phase of one lessons appears to be futile. Such a course might well be divided somewhat as follows:

1. Within the organization.
 - a. Contacts with Superiors.
 - b. Contacts with subordinates.
2. Outside the organization.
 - a. Grazing permittees.
 - b. Sale operators.
 - c. Special use permittees.
 - d. Fire cooperators.
 - e. Tourists, campers, etc.
 - f. Sportsmen.
 - g. Land claimants.
 - h. General public.

You will note that the above involves classes of persons—another type of subdivision might possibly be used, i. e. methods.

such as correspondence, conversation, demonstration, group contact, newspaper, pictures (still and moving), signs and posters, etc. The matter of personalities makes the subject still more involved. I believe that, if given, such a course should be made available to all the regular personnel who are interested. An excellent textbook on the first of the above general divisions is "The Technique of Executive Control" by E. W. Schell.

EAS. I agree with the statement made by Rex King in the last paragraph that "Human nature is the biggest factor in Administration". I think that if an executive cannot handle the men under him in such a way so as to get satisfactory work out of his force, that no amount of rules or standards can improve him along these lines. Some men have great ability along some lines but can never acquire the facility of handling men; these men should never be executives.

Human nature is variable, each man must be approached in a little different manner to get the most out of him, and as for definitely defining the best way to deal with all phases of human nature I think it is an impossibility. No rules or regulations can cover all phases of this question. Human nature must be taken as it comes and handled in the best way that it is possible.

5. The addition of an assistant to the Supervisor should materially lessen the burden on the Supervisor. The assistant should be able to make up routine and certain special reports, assume a part of the supervision job, and handle specialized work which is expected of the Supervisor's office. With an experienced man the Supervisor should not have to do more than issue any special instructions necessary and check over the work when it is finished, as far as routine and special reports assigned to the assistant are concerned. However, he should permit the assistant to feel free in asking advice. The amount of time a Supervisor spends inspecting the work of his assistant is not as important as that of an effective plan for assignment of such duties to the assistant that will:

1. Result in actual worthwhile assistance to the Supervisor—on certain jobs which the assistant is well qualified to handle.

2. Develop the assistant in supervision methods, and function lines with which he is not familiar or in which he is particularly deficient.

Little time should be required on the former; sufficient on the latter for instruction, advice, and to know what class of work the assistant is actually doing. While the former is the more important, generally the Service as a whole has not given sufficient attention to the latter.

C. L. VanGiesen

Colorado

Fort Collins, Colo.

1. There seems to be a definite need for systematic studies of the common, everyday jobs on the Forests. Not only do some of us

question the standard procedure but also the need for doing certain jobs. The need for jobs or portions of them will undoubtedly continue to be dictated largely by the superiors of the Forest personnel. I feel that it would be feasible for each Regional office to assign a separate job study to each Forest. Jobs should be selected with which difficulty has been experienced. The character of the project would govern whether it should be assigned to a Forest as a unit, or to an individual. A simple example of a job which could be studied comes to my mind as follows: Equally good timber sale men mark timber along a contour and at right angles to a contour. Each claim a better quality and greater quantity of marking. I feel that one method must be superior to the other. Would not systematic job studies of this type and of more complex types be of value? While the simple job above, as far as I know, involves no standard practices, it is obvious that other problems which involve standards could be similarly analyzed and studied. I feel that a job study should not be conducted on too large a scale. The results of any study should be widely tested before a change is made in established standards.

3. None of us are egotistical enough to question all of our present standard methods, since we must concede that many of these methods have resulted from study and have been questioned by very able men in the past. It may be that superior officers all along the line should be somewhat more amendable to questioning of the various phases of our work by subordinates. There lies a danger, however, in too general questioning of policies and procedure. None of us are chronic questioners with the idea of being disagreeable. Instead the desire seems to be to initiate a way of doing more or better work. It seems to me that standards, perhaps more flexible standards, will always be necessary in the Service. Our aim in questioning should be with the object of perfecting standards rather than trying to justify the position of doing things in one's own way.

John W. McNair

Shenandoah

Harrisonburg, Virginia

1. We are creatures of habit, and unless we make studies to determine how best to do common everyday jobs, we are apt to cling to the old familiar methods that we have established through habit or that have been handed down to us by those who have gone before.

It is a well known axiom that we either go backward or forward; there is no such thing as remaining stationary. Progress requires constant study and questioning of the existing order. Someone has said that under present conditions it is necessary to run like the mischief in order to stand still.

In order that our studies may furnish a continuous supply of pertinent facts, we should have a systematized fact-finding process. All methods should be tested to determine whether good or

bad before they are made standard.

There seems to be no reason why systematic studies and testing of methods is not practical.

2. It seems to me that on the Forests is the place for most of the studies with everyone within his own sphere participating. This in addition to furnishing pertinent facts would keep everyone "on his toes".

The common argument "we have always done it this way" has been heard time and again by each and everyone of us. The questioning of everything we do, however, will be a great aid in eliminating this attitude and will help us to accomodate ourselves to change.

3. Everything is in a constant state of flux and standards are no exception. They should be based on systematic studies and then periodically tested.

Every man should be a "living question mark", but this does not throw down the bars to each man to do things his own way, as every method must be tested and its value proven before it is accepted as a standard.

4. As King says, the natural course is a comprehensive plan and the splitting up of the problem and dividing the work. Method of attack is also a subject for study.

My opinion is, however, that while many of the Forests have similar problems, the priority or need for study will be different on practically every Forest. Would it not, therefore, be better for each Forest to start a systematic study on the problem which is considered of the greatest importance or in more urgent need of study on that particular unit.

5. I would say that the Supervisor should give only sufficient time to inspecting the work of his assistant to assure himself that he was doing his work in accordance with existing standards and policies. The amount of time would vary with individuals and could not be accurately stated without an analysis of the job and man.

J. V. Leighou

Gunnison

Gunnison, Colo.

Standards should not be established before they have at least been well worked out. There has been a tendency to establish standards when the basic knowledge was not sufficient to determine that the standard was right, with the result that we continue to follow the standard and then suddenly discover that it was not right. We, of course, want to determine what the best method is, and in order to determine the best method it must be tried. I agree with Dr. Hirshfield that everyone must be in on it and be alive to the idea that they must examine everything that they do. That doesn't mean that because the job has been examined and found wanting, in the opinion of the examiner, that he should not

do the job. Such studies are, in my opinion, largely a state of mind and not necessarily a job to be set up. Some men have the questioning state of mind, while others have not. The problem is to develop it in the ones who lack it and that is, of course, an executive function, or call it training if you like. It would be fine if we could develop a course that would do it, but I fear that it is not that simple. It is more a matter of gradual development. We no doubt would be able to develop by administrative study some good ideas on how to develop and control the questioning mind. The big difficulty is to get a man to question his own work. It is very easy to question the other fellow's work or to question procedure outlined by someone else.

Dr. Hirshfield's statement that everyone within his own sphere should be in on it, I believe provides the necessary limitations. I agree with King that the method is the hard nut to crack, but to begin with it is necessary to develop the proper interest in the work and then develop an appreciation of the part one plays in the organization.

I fail to see where the addition of an assistant supervisor to the staff makes more work for the supervisor. A lot of so-called assistant supervisors, however, do not function as such but really are specialists in certain lines of work and do not relieve the supervisors of work, but rather relieve the ranger. The addition of such a man, of course, means more work for the supervisor. If, however, he functions as an assistant to the supervisor, I would say that he very materially reduced the work of the supervisor, since he does work that would ordinarily be done by the supervisor. Inspection of an assistant supervisor's work is, of course, necessary, but probable not over 20 per cent of it ordinarily should be inspected.

M. A. Mattoon

Pisgah

Asheville, North Carolina

Looking at the last paragraph of Supervisor King's letter which leads off Lesson No. 2, he asks a couple of pertinent questions. Recognizing the need for administrative studies or "overhauling research", the difficulty is how to go about it. Most of us would be glad to start but how?

Admittedly, there are a large number of administrative activities or phases of administration which warrant fact finding study. On the correct assumption that everything we do should be questioned, we are immediately faced with a maze of going practices and methods which require study. On the further correct assumption that much of the study, analysis and drawing of conclusions will have to be done by ourselves, we can surely say that it all cannot be tackled and completed at one time. It appears that there must be priority or selection based upon need. What is needed first and most? Perhaps a glance at the summary of activity costs may give us a lead. Where we are out of line and why? Is not some phase or activity being handled so clumsily that the

cost sticks up like nail heads in a Forest Service bridge floor? Imperfect and full of holes as our cost keeping system and methods sometimes appear, they at least serve as pointers. May we not select a few of them, such as we can devote a reasonable amount of time to and start here? Nothing we do is perfect nor incapable of betterment but I know some things are so bum here as reflected on the cost sheet that a starting point is at least suggested.

John N. Kinney

Salmon

Salmon, Idaho

Generally, I agree with Rex King but for one, I can't see that technical research is so far ahead of actual accomplishment. Witnesseth: How to prevent or even suppress Dendroctonus infestations, prevention and practical correction of various stages of erosion; silvical methods; useable fire weather forecasts; Fire protection of inaccessible and low valued timber stands; spread of fire data; relative fire hazard weights; actual fire suppression strategy and technique; Detection and Hour Control standards etc. All pressing administrative problems, which indicate that technical research has a long way to go before it can become very complacent.

Or administrative research, if you wish to confine to that, may have made large strides in the industrial field, but not large enough to solve the present unemployment situation. Or in our own organization we get too enthusiastic and stress field time to a point of where that becomes an end in itself rather than a means to an end; progressive travel isn't always the highest priority way of spending our time; and periodical plans and their execution can be stressed to the detriment of planning. Actual "horrible examples" occur to me on each of the above but are omitted for lack of time and necessity.

Some questions might be raised as to Research methods—For example, I understand that Research expects to draw some valuable conclusions on rate of fire spread from the collective individual fire reports. That sounds all right until we remember just who and how these individual fire reports are compiled and the chances and almost certainty of many and varied inaccuracies. Then one is not so sure.

I remember very distinctly the Challis training camp case, where even after being informed that the lookout estimated the size of the fire to be between 150 and 200 acres, 21 regular Forest Officers (Rangers, Supervisors and R. O. members) after going around a 180 fire, estimated its size all the way from 155 to 3,000 acres, with an average of 550 acres. Now most individual fire reports are prepared by short-term fire guards (checked only by Rangers and Supervisors) and I wonder just what worth while data on rate of spread can be expected to result. Obviously to me at least, Research will just about be compelled to make its own records to get an accurate basis for information on rate of spread.

1. I am strongly in favor of making systematic studies of the common everyday jobs and the testing (not toasting) process. I believe these two things to be, not only practical but, necessary.

2. I don't know who will do this or how the time and funds can be provided on the Forests.

3. It should improve the standards and standard methods, if done correctly. All action should be guided by knowledge of properly correlated standards and conditions.

4. Not only King's last paragraph, but the last sentence of that same last paragraph. Some men are good doers, but lack the necessary qualities to reach proper decisions. Others, while making good decisions, forget that they have subordinates and try to attend to all the details themselves. Still others conceive, but fail to have necessary details worked out. Some are good inspectors and poor trainers, while some are good trainers and poor inspectors, etc. Probably none of this is as it should be, but is as is.

5. I like the problem method of discussion, but don't think much of this particular problem. In fact, it is no problem at all to my little way of reasoning. It depends upon the size of the job to be done, the education, experience and training of the individual Asst. Supervisor.

Alva A. Simpson

Beaverhead

Dillon, Montana

A few years ago, when we first began to make administrative analysis, the seeds of administrative research were planted. We began to question the why and how of accomplishment, and I doubt if anyone will admit but that we found a vast number of jobs, procedure, and actions that were being accomplished in a costly, time-destroying manner. I doubt if any one of us is satisfied with present methods, and if this is true we have, to some extent, reached the point of being a question mark.

Everyday jobs may be improved by constant check and search for more efficient methods. These jobs are many and the priority in the need of one individual will not be the primary interest of another; yet, collectively, if the information is disseminated most jobs may be improved. I recall an instance where the original analysis based on pack transportation indicated that 9 days were required to inspect a certain sheep range. A systematic time and method study made on the ground revealed the fact that the required standard might be attained by an investment in one cabin and pasture, the planned distribution of horses, and the elimination of the time-consuming pack horse. Again, the present standard fire equipment in R-1 is an example of more effectiveness with less weight, and was developed through research and test.

I am optimistic enough to believe that the Forest Service is not entirely committed to precedent.

I see no need for discussion of the necessity for changing standards. The standard of fire control in 1910 was not recog-

nized in 1930. Does not our history prove that our standards are constantly changing?

Question 5 can only be intelligently answered by a direct comparison between an analysis of the Supervisor's job before and after the assignment of the additional assistant. None of us can say "how much" until we have assembled the facts, considered the human equation especially as to the need and extent of training required, and assigned the responsibilities to staff and Supervisor. The question only brings out the need for research, it is not intelligently answered otherwise.

B. C. Saterbo

Snoqualmie

Seattle Wash.

1. Systematic study of methods appeals to me. The man doing the job is not qualified to judge his own methods. He has one eye on the regulations and the other on standards to be attained. The man supervising a test of methods would need to be one of broad experience and understand men as well as conditions under which job is to be done. Two questions arise to lessen for me the interest in method testing: Will methods be accepted as standard before being proven applicable in a sufficiently wide field? Will the testing add greatly to our already top-heavy load of paper work.

3. For a ranger to be a living question mark strikes me as being good or bad according to how much territory he tries to cover. It is good for him and his job if he questions the things he himself can change or at least can feel free to express himself about to his superior officers. It is harmful to him if he questions the things over which he has no control. The faulty things, real or fancied, that he sees become alibis for poor work and his morale is on the toboggan. A questioning mind needs an outlet preferably in action, but an open forum might act as a safety valve. Barring such outlets questioning appears to me dangerous. Narrowing down of the field still leaves us much to question with benefit to ourselves.

4. King says "is not human nature the biggest factor in administration". I think we all agree and yet our files yield nothing of matter to guide us. We may perhaps list our men as "cooperators" and scan our P. R. dope for the proper approach. Here is a "rule of thumb" I have used. When an inspector grates on my nerves I can check on his method of approach and avoid it in dealing with the men under me. On the other hand if an inspector leaves me in a frame of mind that makes the service the biggest thing on earth then I can safely try to copy his methods. Would like to see some outline of basic principles even though details are as varied as the individuals with whom we deal.

W. R. Kreutzer

Colorado

Fort Collins, Colo.

1. It is my personal opinion that the research method should

be used more than it is in our every day forestry work. It seems to me that it is a fact that we do not progress sufficiently because we fail to question our method.

Problems come up every day and they must be decided or solved. We must be able first to locate our problem before we can start the work of analysis for the facts that should lead to the proper solution. If we are not careful about this we may fail to even properly locate the problem, in which event our analysis, if we make one, will not be based upon facts, but upon fiction.

Once we know the problem, and have made the analysis, separating it into parts based on the process of fact finding, the wrong and right methods should be clearly brought out. There is an urgent demand in our Service for testing methods before we approve them or use them as standards.

2. Human relation studies; job studies, covering the various phases of our every day work, would have to be made for the most part by the local Forest officers on each Forest.

Certain lines of work might, of course, well be studied to advantage by members of the Regional office. This should be undertaken within each Branch. It certainly cannot be a one-man job, for, as pointed out by Dr. Hirshfeld in the lesson, "everybody within his own sphere should be in on it."

There should be a carefully worked out system for making these studies, otherwise, we may find that "balkiness" or "stubbornness" will result instead of progress. In other words, one may come along and question everything the Ranger did because he failed to question everything himself; then another comes and questions everything that has been already questioned by number one, and so on without end, system, or any real useful purpose. Merely questioning things is only the first step.

An incident comes to mind. I was doing the very best I could on the job of handling the business on a new National Forest. I had just been taken from the Ranger ranks and instructed to assume charge of the Forest. I had no clerk, no stenographer, no assistant; just a forest of about 900,000 acres and six Rangers. The office hours were from 7 A. M. until 11:30 P. M.

The correspondence was all done by indelible pencil and heavy carbon paper. I had seven sort of "meat hooks" arranged on a board and nailed to the office wall; one hook for the correspondence with each Ranger and one hook for the Forester. At stated periods I would take the correspondence from these hooks and arrange it in the files.

One day along came a clear-cut young fellow, and after making himself acquainted, he advised me that he was one of the Service record and business routine inspectors. He was what we would call today a "Specialist", or Office Administration man.

I saw him glance around the room; he seemed to be interested

in some hieroglyphics I had made on the calendar opposite various dates, then with a glassy fixed stare he riveted his attention on my series of "meat hooks". After trying hard to justify my system, in the face of inadequate help, the hooks were ripped from the wall. My open files were checked. Then came the closed files in the paste board boxes on the shelves. He said our latest circular provided that these files should be rearranged according to the up-to-date and standard instructions. So the man with the specialistic questioning mind took each transfer box or case and dumped the contents thereof in a huge pile on the office floor.

He attempted to rearrange these closed files for me according to the latest version of filedom. It seemed a hopeless job. As I recall the circumstances now, he had more files than he had transfer cases. Try as he would some of the correspondence would not agree with any of the new headings in the up-to-date system.

The heap on the floor seemed to be growing larger and larger. Finally, he informed me that his "itinerary" demanded his presence at some other distant Forest. Before leaving, however, he pointed to the pile on the floor and admiringly looked up at some of the forestry pictures he had switched around on the wall and informed me that I knew how to handle files now, filing and office procedure, and that I should have no trouble in re-arranging the remainder of the files during odd times along with my other work.

After he left, for a moment the remainder of the files on the floor seemed to have a rotary motion and to be whirling around me; there was a feeling of seasickness, but I finally regained hold of myself. I could think clearly again. I began to question why the inspector acted as he did. The walls looked somewhat better; some of my important files were hopelessly lost in the mixture on the floor.

The lesson that was put over to me was that my current filing should have been kept up every day, and that the inspector had made a grave mistake in meddling with closed files. This brings out the necessity for a systematic analysis and need for the orderly arrangement of putting things together again.

The wide-awake school boy liked to tear the alarm clock to pieces. He does this with a questioning mind; he questions every move he makes, every screw, every wheel, every pinion; he finally gets it all apart. No matter how hard he thinks, and continues to question he cannot, for the life of him, get the wheels, springs, screws, cogs and pinions where they belong. His clock is a hopeless heap on the floor. He cannot put the parts together again. It is safe to say that 99 out of every hundred boys will repeat this.

How about the watch maker? His mind follows a mechanical system. By the scientific method and the tools he uses he puts the clock together more rapidly than the boy could dismantle it. Men are much the same as boys in their ways of applying their minds to every day jobs and work. Some men are slower than boys in

their teens in the process of analysis and synthesis as applied to their every day problems.

3. There, undoubtedly, should be considerable elasticity in the attempts to carry out so-called "standard plans" and standards in such plans. If these standards are not kept up monthly, weekly, or daily or even on shorter intervals of time in some lines of work and jobs, we are bound to fall hopelessly behind and there will be very little or no progress made. We should be "living question marks". In some instances we may have to let down the bars within reason in order to break through and clean up on the old and worn out standards.

4. Time should be provided for research in each Branch of our organization. Each important problem of each Branch should be given consideration by the various Regional and Washington offices concerned. We on the Forest should give attention to certain administrative studies that are most vital to the field administration. To get started right we must work out our methods, otherwise, we will be losing time just pulling things to pieces like the boy with the clock.

5. The Supervisor should coach and train his assistant Supervisor; delegate authority, accountability and responsibility to him. He should give him the Supervisor's job gradually, one thing after another, until he is carrying a full load. He should watch him while at work but should try not to embarrass him.

It should be remembered that we can't tell what our assistant Supervisor can do until we have tried him out. At various times we should give him the load, let him have the reins, and be ready to support him wherever his administration appears weak and to need assistance.

The Supervisor should act the role of the "living question mark". He should give sympathetic encouragement where needed, discuss methods, and keep away from harsh criticism, which rarely makes for development or progress in the science of forestry.

6. Efficiency and Scientific Management

We don't seem to be quite so enthusiastic about "efficiency" throughout the country as we were only a few years ago. Some of the labor groups seem to blame efficiency and machines for our present deplorable unemployment condition.

Harrington Emerson, one of our celebrated efficiency engineers, spent quite a number of years in Germany learning efficiency and scientific management, which, it has been claimed, he helped introduce in America. He and other efficiency experts claimed they were living efficient lives. The newspapers some time ago came out with startling information that Emerson's untimely death was brought about by over work in connection with the Russian, Japanese, Chinese and other "plans."

Several thousand of our engineers, planners, architects, etc.

went to Russia to help that country beat the world along super-efficiency lines. At a meeting of the International Lions Clubs held at Toronto, Canada, resolutions were passed to the effect that some 2000 or more of these engineers should be given a limited time to either come back or forfeit their citizenship and stay in Russia.

We are told that the highly specialized efficiency and scientific management practices by Germany was and is yet the most direct factor of her downfall.

This spring on Federal Highway No. 285, Larimer County, Colorado, we were told in a meeting of the County Commissioners that some \$250,000 were appropriated for the purpose of relieving unemployment. The complaint made was because of "efficiency methods" only a very few highly specialized men were hired mostly to man the great machines, which helped to make more unemployment.

Again, it was charged that some 45,000 or more Western lumber jacks were thrown out of work because the Eastern lumber dealers saw a little larger margin of profit for themselves by using Russian lumber.

Thousands of serious cases could be cited along these lines. No wonder we and other countries are now confronted with problems of the unemployment of millions of people.

I am not a crepe hanger; I am very much interested in real progressive measures that will make for the welfare of mankind. Efficiency was turned loose on the world and we are now just getting a glimpse of what misery has resulted.

We had better get out of the wilderness, get a good look backwards, and a long look forward, figure out what we are going to do, and why, and carefully work out a procedure that will be sure to bring the desired results that make for the betterment of mankind before we start.